

MULTIMEDIA



UNIVERSITY

STUDENT IDENTIFICATION NO

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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2015/2016

TSI2241 SYSTEM INTEGRATION AND ARCHITECTURE
(All Sections / Groups)

1st MARCH 2016
2:30 p.m. – 4:30 p.m.
(2 Hours)

INSTRUCTION TO STUDENTS

1. This paper consists of 3 pages with **SIX (6)** questions only.
2. Attempt **FIVE** out of **SIX** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write all your answers in the answer booklet provided.

QUESTION 1

- a) State FOUR (4) UML diagrams that can be used for requirement modelling. (2 marks)
- b) *Obtain the checkout date of the book then find the total days the book has been borrowed by finding the difference between the return date and the checkout date. If the total days the book has been borrowed exceeds 60, then calculate the fine. Each day the book is overdue, the user is fined RM 0.20. Collect the payment from the user. Once the fines, if any, are cleared, the book status is set back to available.*

Based on the above requirement description given by the client:

- i. Decide AND justify which UML diagram should be used to model the requirement. (2 marks)
- ii. Draw the UML diagram based on your answer in part (i). (6 marks)

QUESTION 2

As a cost cutting measure, a company has decided to make a drastic change to its culture. All PCs used are to be replaced with thin clients like the Google Chromebook.

- a) Define what a fat client and a thin client are. (2 marks)
- b) As an analyst; provide your evaluation of fat clients and thin clients with regards to network traffic, performance, initial cost, and ease of development. (8 marks)

QUESTION 3

- a) Quality Assurance is a planned and systematic pattern of all actions necessary to provide adequate confidence that the item or product conforms to established technical requirements.

Describe which perspective should be taken if the aim was to determine performance conforms to the technical requirement specification. Justify your answer by eliminating the other perspectives. (5 marks)

Continued...

- b) Testing the system is an essential step to ensure the system is as error-free as possible.
- Define what test data is. (1 mark)
 - Compare between integration testing and system testing. (4 marks)

QUESTION 4

- a) Net present value (NPV) analysis is a method of calculating the expected net monetary gain or loss from a project by discounting all expected future cash inflows and outflows to the present point in time.

Fill the table below and evaluate the NPV for a project with a discount rate of 8% and the assumption the project is completed in year 0. (7 marks)

	Year				
	0	1	2	3	Total
Costs	140,000	40,000	40,000	40,000	
Discount factor	1				
Discounted costs	140,000				
Benefits	0	200,000	200,000	200,000	
Discount factor	1				
Discounted benefits	0				
				NPV	

- b) Based upon the NPV calculated from the previous question, calculate the return on investment (ROI) of the project.

Comparing between NPV and ROI, which measurement provides a better indicator of the investment "efficiency"? Justify your answer. (3 marks)

Continued...

QUESTION 5

- a) Business process re-engineering is a process that essentially dismantles existing business processes into individual activities and puts them back together in a new set of business flows.

Compare between the “As Is” phase and the “To Be” phase. (6 marks)

- b) Given the following table, calculate the estimated FP if the sum of factors is 65.
(Note: Round the estimated count at 2 precision points, and the FP count at 0 precision points.) (4 marks)

Information domain value	Optimistic	MostLikely	Pessimistic	EstCount	Weight	FPCount
Num of simple inputs	3	4	8		3	
Num of average outputs	2	3	4		5	
Num of simple inquiries	6	7	10		3	
Num of simple files	5	6	8		7	
Num of complex ext interfaces	1	2	5		10	
Count total						
						117

QUESTION 6

An example of enterprise integration application is Customer Relationship Management (CRM) system.

- a) Define what CRM is. (2 marks)
- b) Discuss what are the changes needed, on an enterprise level, to successfully implement CRM. (8 marks)

End of Paper